

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Due Date: \_\_\_\_\_

## Problem of the Week Scientific Sums

When solving the following problem, be sure to:

- 1) Restate the Question
- 2) State your answer in a complete sentence (reference the question).
- 3) Show work and/or explain solution strategy

Mathematicians and scientists often use scientific notation when working with very large or very small numbers. If you are not familiar with this type of notation, please see Dr. Math's answer to the question, "How do you write a number in scientific notation?"  
[<http://mathforum.com/dr.math/problems/sherwood1.16.97.html>]

The number 25,700,000,000,000,000 can be written in scientific notation as  $2.57 \times 10^{16}$ . Now isn't that a space saver?

When it comes to adding numbers written in scientific notation, you must be very careful with place value. Please help me to find the sum of the following numbers:

$2.57 \times 10^{16}$	$3.64 \times 10^{15}$	$7.93 \times 10^{16}$	$4.83 \times 10^{15}$
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Don't forget to write your final answer in a complete sentence. Also, be sure that your sum is written in scientific notation.

**Bonus:** When working with very large or very small numbers, mathematicians and scientists will also consider significant digits.<sup>\*</sup> Explain what is meant by significant digits and state your answer to the sum using significant digits.

<sup>\*</sup>[<http://mathforum.com/dr.math/problems/ashley03.23.99.html>].

Please answer the problem on a separate piece of paper. You must include all your calculations and an explanation of how you got your answer. Your paper will be scored in the following way:

- 4 The answer and the bonus are correct, you have included all your calculations, and the explanation is thorough and understandable.
- 3 The answer is correct, you have included all your calculations, and the explanation is complete and clear to the reader.
- 2 The answer is missing one of the items mentioned above.
- 1 The answer is incorrect, and the explanation or calculations are poor or missing.
- 0 Minimal or no effort was made to solve the problem.
- All late work is marked down a grade.